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ABSTRACT

This study investigated the degree to which it was possible to identify students who were likely to fail the Ohio Ninth Grade Proficiency Test (ONGPT) from data contained in their academic records. The criterion measure was student scores on the Trial Test of the ONGPT, a measure selected because it provided scores that could be correlated, as opposed to the pass/fail scores reported through the ONGPT. The predictor variables were gender, middle school grade point average, educational program, and eighth grade subtest scores on the California Achievement Test (CAT). A sample of 52 students was used to study the feasibility of an expanded study. The results indicate a high correlation between success on the Writing subtest of the ONGPT and scores on the Language portion of the CAT. Reading ONGPT scores correlated with Reading CAT scores, and Mathematics ONGPT scores correlated with Mathematics CAT. The highest predictor for the Citizenship ONGPT was the Mathematics CAT. Relationships between the standardized achievement tests and ONGPT were strong enough to help identify students who need additional assistance to prepare for the ONGPT. (Contains four tables and four references.) (Author/SLD)

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Predictors of Success on Ohio's Ninth Grade Proficiency Test

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Abstract

This study investigated the degree to which it was possible to identify students who were likely to fail the Ohio Ninth Grade Proficiency Test (ONGPT) from data contained in their academic records. The criterion measure were the students scores on the Trial Test of the Ohio Ninth Grade Proficiency Test. This measure was selected because it provided scores which could be correlated as opposed to the pass/fail scores reported through the ONGPT. The predictor variables were: gender, middle school, GPA, educational program and eighth grade subtest scores on the California Achievement Test (CAT). An N=52 was used to study the feasibly of an expanded study. The results indicate a high correlation between success on the Writing subtest of the ONGPT and scores on the Language portion of the CAT. Reading ONGPT correlated with Reading CAT and Mathematics ONGPT correlated with Mathematics CAT. The highest predictor for the Citizenship ONGPT was the Mathematics CAT. Relationship between the standardized achievement tests and ONGPT were strong enough to help identify students who need additional assistance to prepare for the ONGPT. Four tables present study data and correlations.

Predictors of Success on Ohio's Ninth Grade Proficiency Test

Purpose

In Ohio every student must successfully complete the OHIO Ninth Grade Proficiency to earn a high school diploma. The Ohio Ninth Grade Proficiency Test consists of four subtest: writing, reading, mathematics and citizenship. If a student does not pass the test, he/she will receive a certificate of attendance and not a high school diploma.

The state of Ohio is expanding the proficiency testing program to include grades twelve, four and six. Eventually, the state will add a science subtest to each level of the proficiency test.

The proficiency test uses valuable instruction time to administer. It requires portions of four days for testing and portions of twenty days for possible make-ups. Since a student has ten different opportunities to take the test a substantial loss of instructional time is lost for the administration to students of the ONGPT.

By identifying the students likely to need help for success on the proficiency test prior to the students first administration of the test, we could reduce lost instruction time due directly to the proficiency test administration. Furthermore, by looking closely at the middle school variable, we could analyze the information to insure the school district's scores did not differ significantly between the two middle schools.

Previous Studies

Three studies appear to address the issue of using the achievement test as a predictor of success for the ONGPT. A study by Lanese (1992) analyzed the correlation between the ONGPT and the CAT test. He found that a high correlation between the objectives of both tests. Furthermore, Lanese looked at socioeconomic status. He found a strong positive relationship between the economic status of the district's students and the performance on the test. The Hull & Tache (1993) and the Robinson & Moore (1992) studies addressed use of the stanine levels of achievement tests (Iowa Test of Basic Skills and CAT, respectively) to predict succes on the ONGPT. Both found a high correlation between the achievement test and the ONGPT scores.

Studies comparing proficiency/competency test scores from other states with achievement scores show a similar correlation. The Smith study of 1982, looked a multitude of variables in relation to the North Carolina Competency Test. Smith found a high correlation between the two types of tests as well. He also found the risk group attends school less, receives lower teacher ratings on dependability and maturity, tends to be black and male, and scores lower on all cognitive variables except clerical speed and accuracy. Smith explained this clerical test discrepancy by the fact that the test is of rote nature and the other students were not challenged by the task.

Method

Subjects

Subjects for this study were 52 eighth grade students (21 male, 31 female). They represented three different program options in a suburban community in Ohio. The program options are: Enriched , an honors program (n=21); College-prep, the basic educational program (n=15); and Transitional, at-risk students (n=16). The middle school options were: School A (n=14) and School B (n=38).

Since the major purpose of this study was to identify the feasibility of a more excessive study, random group sampling was used to select the subjects from the total population. This sampling procedure insured that all program areas were represented.

Instruments

The predictor variables for this correlational study are: gender, program, middle school, and scores from the standardized California Achievement Test Version 5 (CAT/5). It is administered as part of the Ohio state testing program. CAT/5 tests language arts, reading, and mathematics were used.

The criterion variable were the student scores on writing, reading, mathematics and citizenship subtests of the Ohio Ninth Grade Proficiency Trial Test.

Procedures

To statistically distinguish between students who were likely to fail the ONGPT from students likely to pass, four stepwise discriminant analyses were conducted. The first analysis focused on the identification of students likely to fail the writing portion of the ONGPT. The second analysis focuses on students likely to fail the reading portion of the ONGPT. The third analysis focuses on students likely to fail the mathematics portion of the ONGPT. The final analysis focuses on the citizenship portion of the ONGPT.

The NCE scores from the CAT test were used to correlate with the scores obtained by administering the Ohio Ninth Grade Proficiency Trial Test. The trial test was selected to facilitate the use of the raw scores versus the pass/fail reporting by the state of Ohio on the Proficiency Test.

Additionally, we correlated each academic score with the middle school. This analysis was provided to insure biases did not occur due to the middle school attended.

Results

The means of all variables indicated no significant differences between middle school and any of the academic areas: GPA, CAT scores or Proficiency Test scores. Though School B scored slightly higher than School A in most areas of the

CAT and Proficiency Tests, School A's GPA was slightly higher than School B's GPA. However, the low number of subjects does not indicate a significant difference. If the district chooses to pursue a more extensive study these results warrant further investigation.

Insert Table 1 Here

The means of all variables indicated significant differences among the three programs with the academic areas: GPA, CAT scores or proficiency test scores. The enriched program scored significantly higher in all academic areas than the college-prep program. Likewise students in the college-prep program scored significantly higher than the transitional program students. Though these differences are significant, it should be noted that the students were placed in the programs based on academic factors. Consequently, the differences are expected.

Insert Table 2 here

When we look at the means of all variables in regard to their program and middle school a new picture emerges. Students in School B scored higher than School A in all areas of the proficiency test if they were in the enriched or college-prep programs. However, students in the transitional program from School B scored lower than their counterparts from School A in all areas of the proficiency

test except citizenship. Further study may help explain this difference.

Insert Table 3 here

The results of the correlational analysis, indicate strong correlations between the academic based predictor variables (GPA, CAT subtests and Program) and the criterion variables of the proficiency test. Though the non-academic based predictor variables (gender and middle school), correlated with the areas the correlation factor was very low.

A stepwise analysis was preformed on the four areas of the proficiency test. With the exception of the citizenship subtest each subtest of the ONGPT correlated strongly with the corresponding CAT subtest. In the case of the citizenship subtest of the ONGPT the strongest predictor was success on the CAT mathematics subtest. This unusual correlation may be of concern and warrant further study.

Insert Table 4 here

Discussion

The results of this analysis demonstrates that it is possible to identify factors which are future predictors on the ONGPT. Those factors analyzed that produced the highest correlation was the results of the CAT test.

The correlations from this study, together with the previous studies (Lanese, Hull & Tache, and Robinson & Moore) suggest the achievement test may be used as a predictor of success on the Ohio Proficiency Test. This also correlates with studies based on proficiency/competency tests in other states (Malbert).

If achievement test scores are used as indicators of success, it is suggested to use the most recent scores available. If possible, scores less than one year old. The intervention could occur as soon as the scores are received. This procedure would provide an adequate preparation period.

A more extensive investigation could also aid school districts in identifying additional predictors of success. Further studies may wish to analyze factors such as attendance, extra-curricular involvement, parental educational background, socioeconomic background and Differential Aptitude Test (DAT) scores.

As for the analysis of the programs and the middle school variables, we found factors which might warrant a more intensive investigation. Though this study did not show a significant difference between the middle schools and the interaction between the middle schools and the programs, some differences and trends seemed

to emerge. One concern was that students from School B consistently scored higher than School A in the higher level programs. However, in the lower level program that trend appears to reverse itself. If the middle school have equal populations than the means of the scores should not vary as much.

In conclusion the subtests on the CAT tests may be used as predictors of success on the ONGPT. There are slight differences between the two middle schools. Further intesive studies of all students in the class might help the researcher draw firm conclusion to whether those differences are significant.

TABLE 1

Descriptive Statistics for Ratings of Variables by Middle School

	School A n=14		School B n=38	
Variable	M	SD	M	SD
GPA	2.73	0.07	2.35	0.12
CAT Reading	54.28	2.63	57.75	4.57
CAT Language	52.05	2.66	47.13	4.64
CAT Math	49.54	2.76	51.75	4.80
PROF Writing	2.44	0.06	2.54	0.10
PROF Reading	54.02	1.90	56.24	3.32
PROF Math	57.02	1.67	61.52	2.92
PROF Citizenship	59.35	1.99	65.39	3.47

TABLE 2

Descriptive Statistics for Ratings of Variables by Program

	Enriched n=21		College-Prep n=15		Transitional n=16	
Variable	M	SD	M	SD	M	SD
GPA	3.71	0.10	2.61	0.12	1.30	0.13
CAT Reading	88.25	3.73	49.26	4.70	30.54	5.16
CAT Language	73.71	3.78	39.67	4.77	25.39	5.23
CAT Math	83.11	3.92	48.25	4.94	20.59	5.42
PROF Writing	3.00	0.81	2.45	0.10	2.02	0.11
PROF Reading	76.82	2.74	51.40	3.41	37.17	3.74
PROF Math	79.57	2.38	62.02	3.00	36.21	3.29
PROF Citizenship	79.18	2.82	62.47	3.56	45.46	3.91

TABLE 3

Descriptive Statistics for Ratings of Variables by Program and Middle School

	Enriched n=21				College-Prep n=15				Transitional n=16			
	School A n=14		School B n=7		School A n=11		School B n=4		School A n=13		School B n=3	
Variable	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
GPA	3.77	0.11	3.64	0.16	2.83	0.13	2.39	0.21	1.57	0.13	1.03	0.24
CAT Reading	89.5	4.31	87.00	6.09	49.27	4.86	49.25	8.05	24.08	4.47	37.00	9.30
CAT Language	84.29	4.37	83.14	6.18	48.09	4.93	31.25	8.17	23.77	4.53	27.00	9.44
CAT Math	79.79	4.52	86.43	6.39	48.00	5.10	48.50	8.46	20.85	4.69	20.33	9.77
PROF Writing	3.00	0.09	3.00	0.13	2.27	0.11	2.63	0.17	2.04	0.97	2.00	0.20
PROF Reading	74.50	3.12	79.14	4.42	47.55	3.52	55.25	5.84	40.00	3.24	34.33	6.74
PROF Math	74.43	2.75	84.71	3.88	57.55	3.10	66.5	5.14	39.08	2.85	33.33	5.93
PROF Citizenship	77.93	3.26	80.43	4.61	57.18	3.68	67.75	6.10	42.92	3.38	48.00	7.05

TABLE 4

Stepwise Multiple Regression of Influence Variables on Proficiency Test Scores

Influence Variable for Writing	Correlation Coefficient (r)	Multiple Correlation (R)	R^2	R^2 Increment
Language - CAT Test	0.73	0.73	0.54	
Gender	-0.47	0.77	0.59	0.05
Mathematics - CAT Test	0.71	0.79	0.63	0.04
Influence Variable for Reading	**Correlation Coefficient (r)**	**Multiple Correlation (R)**	**R^2**	**R^2 Increment**
Reading - CAT Test	0.87	0.87	0.77	
Mathematics - CAT Test	0.79	0.88	0.78	0.01
Influence Variable for Reading	**Correlation Coefficient (r)**	**Multiple Correlation (R)**	**R^2**	**R^2 Increment**
Mathematics - CAT Test	0.87	0.87	0.76	
Reading - CAT Test	0.84	0.89	0.80	0.04
Program	0.76	0.90	0.82	0.02
Middle School	-0.25	0.91	0.83	0.01
Influence Variable for Citizenship	**Correlation Coefficient (r)**	**Multiple Correlation (R)**	**R^2**	**R^2 Increment**
Mathematics - CAT Test	0.89	0.89	0.79	
Gender	-0.30	0.90	0.81	0.02
Language - CAT Test	0.68	0.91	0.82	0.01
Middle School	-0.25	0.91	0.83	0.01

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